We claim:

1. An isolated nucleic acid comprising any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence.

2. An isolated nucleic acid comprising at least eight consecutive nucleotides of a nucleotide sequence of any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence.

3. An isolated nucleic acid comprising at least 80% nucleotide identity with a nucleic acid comprising any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence.

4. The isolated nucleic acid according to claim 3, wherein the nucleic acid has 85%, 90%, 95%, or 98% nucleotide identity with the nucleic acid comprising any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence.

5. An isolated nucleic acid that hybridizes under high stringency conditions with a nucleic acid comprising any one of SEQ ID NOs: 1-4 and 9-126 or of a complementary nucleotide sequence.

6. An isolated nucleic acid comprising a nucleotide sequence as depicted in any one of SEQ ID NOs: 1-4 and 9-126 or of a complementary nucleotide sequence.

7. A nucleotide probe or primer specific for any one of ABCA5, ABCA6, ABCA9, and ABCA10 genes, wherein the nucleotide probe or primer comprises at least 15 consecutive nucleotides of a nucleotide sequence of any one of SEQ ID NOs: 1-4 and 9-126 or of a complementary nucleotide sequence.

8. A nucleotide probe or primer specific for an ABCA5 gene, wherein the nucleotide probe or primer comprises a nucleotide sequence of any one of SEQ ID NOS:127-144 or a complementary nucleotide sequence.

9. A nucleotide probe or primer specific for an ABCA6 gene, wherein the nucleotide probe or primer comprises a nucleotide sequence of any one of SEQ ID NOs: 145-172, or of a complementary nucleotide sequence.

10. A nucleotide probe or primer specific for an ABCA9 gene, wherein the nucleotide probe or primer comprises a nucleotide sequence of any one of SEQ ID NOs: 173-203, or of a complementary nucleotide sequence.

11. A nucleotide probe or primer specific for an ABCA10 gene, wherein the nucleotide probe or primer comprises a nucleotide sequence of any one of SEQ ID NOs: 204-217 or of a complementary nucleotide sequence.

12. A method of amplifying a region of the nucleic acid according to claim 1, wherein the method comprises:

a) contacting the nucleic acid with two nucleotide primers, wherein the first nucleotide primer hybridizes at a position 5' of the region of the nucleic acid, and the second nucleotide primer hybridizes at a position 3' of the region of the nucleic acid, in the presence of reagents necessary for an amplification reaction; and

b) detecting the amplified nucleic acid region.

13. A method of amplifying a region of the nucleic acid according to claim 12, wherein the two nucleotide primers are selected from the group consisting of

a) a nucleotide primer comprising at least 15 consecutive nucleotides of a nucleotide sequence of any one of SEQ ID NOs: 1-4 and 9-126 or of a complementary nucleotide sequence;

b) a nucleotide primer according to claim 7;

c) a nucleotide primer comprising a nucleotide sequence of any one of SEQ ID NOs: 127-217, or a nucleic acid having a complementary sequence.

14. A kit for amplifying the nucleic acid according to claim 1, wherein the kit comprises:

a) two nucleotide primers whose hybridization position is located respectively 5' and 3' of the region of the nucleic acid; and, optionally,

b) reagents necessary for an amplification reaction.

15. The kit according to claim 14, wherein the two nucleotide primers are selected from the group consisting of

a) a nucleotide primer comprising at least 15 consecutive nucleotides of a nucleotide sequence of any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence;

b) nucleotide primer according to claim 7;

c) nucleotide primer comprising a nucleotide sequence of any one of SEQ ID NOs: 127-217, or a nucleic acid having a complementary sequence.

16. The nucleotide probe or primer according to claim 7, wherein the nucleotide probe or primer comprises a marker compound.

17. A method of detecting a nucleic acid according to claim 1, wherein the method comprises:

a) contacting the nucleic acid with a nucleotide probe selected from the group

consisting of

1) a nucleotide probe comprising at least 15 consecutive nucleotides of a nucleotide sequence of any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence;

2) a nucleotide primer according to claim 7;

3) a nucleotide probe comprising a nucleotide sequence of any one of SEQ ID NOs: 127-217, or of a complementary nucleotide sequence; and

b) detecting a complex formed between the nucleic acid and the probe.

18. The method of detection according to claim 17, wherein the probe is immobilized on a support.

19. A kit for detecting the nucleic acid according to claim 1, wherein the kit comprises

a) a nucleotide probe selected from the group consisting of

1) a nucleotide probe comprising at least 15 consecutive nucleotides of a nucleotide sequence of any one of SEQ ID NOs: 1-4 and 9-126, or of a complementary nucleotide sequence;

2) a nucleotide primer according to claim 7; and

3) a nucleotide probe comprising a nucleotide sequence of any one of SEQ ID NOs: 127-217, or of a complementary nucleotide sequence, and, optionally,

b) reagents necessary for a hybridization reaction.

20. The kit according to claim 19, wherein the probe is immobilized on a support.

21. A recombinant vector comprising the nucleic acid according claim 1.

22. The vector according to claim 21, wherein the vector is an adenovirus.

23. A recombinant host cell comprising the recombinant vector according to claim 21.

24. A recombinant host cell comprising the nucleic acid according claim 1.

25. An isolated nucleic acid encoding a polypeptide comprising an amino acid sequence of any one of SEQ ID NOS: 5-8.

26. A recombinant vector comprising the nucleic acid according to claim 25.

27. A recombinant host cell comprising the nucleic acid according to claim 25.

28. A recombinant host cell comprising the recombinant vector according to claim 26.

29. An isolated polypeptide selected from the group consisting of

a) a polypeptide comprising an amino acid sequence of any one of SEQ ID NOs: 5-8;

b) a polypeptide fragment or variant of a polypeptide comprising an amino acid sequence of any one of SEQ ID NOs: 5-8; and

c) a polypeptide homologous to a polypeptide comprising amino acid sequence of any one of SEQ ID NOS: 5-8.

30. An antibody directed against the isolated polypeptide according to claim 29.

31. The antibody according to claim 30, wherein the antibody comprises a detectable compound.

32. A method of detecting a polypeptide, wherein the method comprises

a) contacting the polypeptide with an antibody according to claim 31; and

b) detecting an antigen/antibody complex formed between the polypeptide and the antibody.

33. A diagnostic kit for detecting a polypeptide, wherein the kit comprises

a) the antibody according to claim 31; and

b) a reagent allowing detection of an antigen/antibody complex formed between the polypeptide and the antibody.

34. A composition comprising the nucleic acid according to claim 1 and a physiologically-compatible excipient.

35. A composition comprising the recombinant vector according to claim 21 and a physiologically-compatible excipient.

36. Use of the nucleic acid according to claim 1 for the manufacture of a medicament intended for the prevention and/or treatment of a subject affected by a dysfunction in the reverse transport of cholesterol.

37. Use of a recombinant vector according to claim 21 for the manufacture of a medicament for the prevention and/or treatment of subjects affected by a dysfunction in the lipophilic subtance transport.

38. Use of any one of isolated ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides comprising an amino acid sequence of SEQ ID NOS: 5-8 for the manufacture of a medicament intended for the prevention and/or treatment of subjects affected by a dysfunction in the lipophilic subtance transport.

39. A composition comprising a polypeptide comprising an amino acid sequence of any one of SEQ ID NOs: 5-8, and a physiologically-compatible excipient.

40. Use of any one of isolated ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides comprising an amino acid sequence of any one of SEQ ID NOs: 5-8 for screening an active ingredient for the prevention or treatment of a disease resulting from a dysfunction in the lipophilic subtance transport.

41. Use of a recombinant host cell expressing any one of the ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides comprising an amino acid sequence of SEQ ID NOs: 5-8 for screening an active ingredient for the prevention or treatment of a disease resulting from a dysfunction in the lipophilic subtance transport.

42. A method of screening a compound active on cholesterol metabolism, an agonist, or an antagonist of any one of the ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides, wherein the method comprises

a) preparing a membrane vesicle comprising at least one of the ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides and a lipid substrate comprising a detectable marker;

b) incubating the vesicle obtained in step a) with an agonist or antagonist candidate compound;

c) qualitatively and/or quantitatively measuring a release of the lipid substrate comprising the detectable marker; and

d) comparing the release of the lipid substrate measured in step b) with a measurement of a release of a labeled lipid substrate by a membrane vesicle that has not been previously incubated with the agonist or antagonist candidate compound.

43. A method of screening a compound active on cholesterol metabolism, an agonist, or an antagonist of any one of ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides, wherein the method comprises

a) incubating a cell that expresses at least one of the ABCA5, ABCA6, ABCA9, and ABCA10 polypeptides with an anion labeled with a detectable marker;

b) washing the cell of step a) whereby excess labeled anion that has not penetrated into the cell is removed;

c) incubating the cell obtained in step b) with an agonist or antagonist candidate compound for any one of the ABCA5, ABCA6, ABCA9, and ABCA10 polypeptide;

d) measuring efflux of the labeled anion from the cell; and

e) comparing the efflux of the labeled anion determined in step d) with efflux of a labeled anion measured with a cell that has not been previously incubated with the agonist or antagonist candidate compound.

44. An implant comprising the recombinant host cell according to claim 23.